

Solicitation NNC12442536Q  
Automated Gas Management Panels

## **1. INTRODUCTION**

**1.1** This is a combined synopsis/solicitation for commercial items prepared in accordance with the format in Subpart 12.6, as supplemented with additional information included in this notice. This announcement constitutes the only solicitation; proposals are being requested and a written solicitation will not be issued. The Solicitation number is NNC12442536Q, and is a Request for Quote (RFQ). This Solicitation document and incorporated provisions and clauses are those in effect through Federal Acquisition Circular 05-60. This procurement IS NOT set aside for small business, and is a full and open competition. The NAICS code for this procurement is 334513, Instruments and Related Products Manufacturing, Displaying and Controlling Process Variables.

**1.2** A list of contract line item numbers and items/services to be acquired, including delivery dates/location and FOB point, are described in Section 3 “DELIVERY AND FOB POINT” and in more detail in Section 4 “SPECIFICATIONS”.

**1.3** Provision 52.212-1, Instructions to Offerors – Commercial, applies to this procurement. No addenda are included. See Section 7.1 for further detail.

**1.4** Provision 52.212-2, Evaluation – Commercial Items, applies to this procurement. See Section 8.1 for further detail.

**1.5** Offerors shall include a completed copy of the provisions 52.212-3, Offeror Representations and Certifications – Commercial Items, with its offer. See section 7.6 for further detail.

**1.6** Clause 52.212-4, Contract Terms and Conditions – Commercial Items, applies to this procurement. See Section 6.1 for further detail.

**1.7** Clause at 52.212-5, Contract Terms and Conditions Required To Implement Statutes or Executive Orders—Commercial Items, applies to this procurement. Applicable clauses are checked and text is in bold font. See Section 6.2 for further detail.

**1.8** The DPAS rating for this procurement is DO-C9.

**1.9** Offers are due to Jeffrey Hoyt no later than 4:30 pm local GRC time on Friday, August 24, 2012. Offers shall be submitted via e-mail to [Jeffrey.D.Hoyt@nasa.gov](mailto:Jeffrey.D.Hoyt@nasa.gov). Telephone correspondence is NOT appropriate for this procurement, and all telephone inquiries will be directed to communicate via email.

**1.10** Questions regarding this acquisition must be submitted in writing no later than 4:30 pm on Friday, August 17, 2012.

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**1.11** Notwithstanding the areas discussed in this Introduction, all aspects of this Solicitation are of equal importance and should be read and considered for any response.

[END OF SECTION]

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## 2. PROCUREMENT BACKGROUND

NASA's Glenn Research Center is currently in the process of building the Extreme Environments Test Chamber, which will be used to simulate the atmospheres of various bodies in the solar system, most notably the atmosphere of Venus; other possibilities include the atmosphere of several of the moons of Jupiter and Saturn. In order to accurately simulate these extraterrestrial environments, the temperature and pressure found on the surface of these environments must be simulated, as well as the gas constituents of these environments. The gases required to generate the atmospheres consist of several different gas species. These species may include, as a minimum, nitrogen, carbon dioxide, and other species consisting of a gas species mixed with nitrogen. For example, some of the gas species required to simulate the atmosphere of Venus include nitrogen, carbon dioxide, hydrogen chloride gas, hydrogen fluoride gas, carbonyl sulfide, sulfur dioxide, nitric oxide, carbon monoxide, and water vapor (in addition to nitrogen and carbon dioxide). Other atmospheres will require gases such as ethane and methane.

All of the gas species will be carefully metered to ensure that the correct concentrations of the gases are present in the final mixture. In addition, due to the safety issues surrounding the more exotic gases such as carbon monoxide, hydrogen fluoride, and hydrogen chloride, the introduction of these gases must be handled with particular care. To safely handle these gases, automated gas management panels will safely control the flow of these gases, as well as the purging, evacuation, and venting of the tubing carrying these gases. This procurement is for the purchase of six automated gas management panels, including two options to purchase a seventh back-up panel and to purchase panel programming services.

The gas management panels being purchased under this procurement will provide the primary function of providing the particular gas species to the gas mixer. In addition to the primary supply function, each gas panel shall provide the functions of evacuating the gas species tubing, purging the tubing with nitrogen, detecting leaks or other abnormalities within the gas management panel or its associated tubing, and safe supply bottle change-out. In order to simplify the design and procurement, as well as to reduce cost, all of the gas management panels must be identical. The four modes of operation are summarized:

1. Supply gas species through the gas management panel to the gas mixer
2. Vent the gas management panel tubing
3. Purge the gas management panel tubing
4. Evacuate the gas management panel tubing

This procurement consists of three parts. The first part (the 'Base effort') is for the purchase of the six gas management panels that are able to be controlled by an automated control system. The second optional part (Option 1) is for the purchase of a seventh panel to be used as a back-up. And the third optional part (Option 2) consists of

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the automated control system programming of the gas management panels. Any prospective vendor's bid must contain a quote for the base effort. Options 1 and 2 may be bid upon if the vendor so desires. As described in more detail in the 'Selection and Evaluation' section of this Solicitation, offerors will not be negatively graded if they do not provide quotes for Options 1 and 2. However, offerors who submit quotes for Options 1 or 2 have the ability to be graded more favorably for doing so. The exercise of both Options is at the discretion of the government.

[END OF SECTION]

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### **3. DELIVERY AND FOB POINT**

#### **3.1 Deliverables**

The following 3 contract line items are being solicited on a Firm-Fixed Price basis:

- 1) 6 Automated Gas Management Panels, delivered to NASA GRC by November 2, 2012.
- 2) 1 Back-Up Automated Gas Management Panel, identical to the first 6, delivered to NASA GRC by November 2, 2012.
- 3) Programming of Automated Gas Management Panels, completed by November 2, 2012.

#### **3.2 Delivery Instructions**

- (a) The Contractor shall ship the items required under this contract to:

NASA Glenn Research Center  
21000 Brookpark Road  
Cleveland, Ohio  
44135  
Attn: TBD  
Contract Number: NNC12CA37C

- (b) Unless otherwise authorized in advance by the Contracting Officer, deliveries under this contract shall be made between the hours of 8 am and 4:30 pm, Monday through Friday, excluding Federal holidays.

- (b) Additional delivery instructions: TBD

- (d) Additional marking instructions: TBD

(End of clause)

#### **3.3 FOB Point**

Delivery shall be FOB Destination, NASA Glenn Research Center. Therefore, quoted prices MUST include ALL shipping and handling charges. The anticipated contract will not contain a separate line item for shipping.

[END OF SECTION]

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## 4. SPECIFICATIONS

### 4.1 Overall specifications

**4.1.1** The Contractor shall supply six identical gas management panels, including an optional seventh back-up panel and optional programming services for the supplied panels. Each panel shall contain valves that allow the tubing to be evacuated (with an external vacuum pump) and purged with nitrogen. The vacuum pump for evacuating each panel will be supplied by the government, as will the nitrogen required for purging. The complete, final design for the panels is incumbent upon the offeror. The offeror shall meet all specifications listed unless the vendor takes exception to a particular specification; in this case, the vendor must note the specification being excepted, and provide an explanation of how the vendor's design satisfies the specification in other ways (if at all).

**4.1.2** The anticipated operational method of each gas management panel is as follows: First, the panel tubing will be purged with nitrogen. The tubing will be pressurized with nitrogen to a nominal pressure of 100 psig. Panel valves will then be closed, and the pressure decay will be measured to verify the integrity of the panel components. If the rate of pressure decay is within acceptable limits, the panel tubing will then be evacuated using the vacuum source. Once the tubing is evacuated, the panel integrity will once again be verified by closing valves and measuring pressure rise. If the pressure rise is within acceptable limits, the panel can actually begin flowing the gas species from the gas bottle that is connected to the panel. It is anticipated that each gas management panel will incorporate at least one pressure sensor for the pressure rise and decay rates. These operations will all be performed by the automated control system.

**4.1.3** One of the goals of the operational method noted above is the detection of leaks in the gas management panel tubing and components. In addition to detected leaks through valves, the detection of leaks to the surrounding environment (the gas cabinet) is also crucial. The gas panel instrumentation and its automated control system shall be designed to reduce the risk of personnel exposure to any of the toxic gases.

**4.1.4** Each gas management panel shall be able to supply a gas mixture such as the following: nitrogen, carbon dioxide, hydrogen chloride gas, hydrogen fluoride gas, carbonyl sulfide, sulfur dioxide, nitric oxide, carbon monoxide, water vapor, ethane, and methane.

**4.1.5** Each gas management panel shall be able to be purged with nitrogen from a nitrogen source supplied by the government. Each gas management panel shall be able to withstand a purge pressure of at least 150 psig. In addition to purging the panel, the panel shall also be able to use the nitrogen for leak detection by closing valves and measuring the rate of pressure decay.

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**4.1.6** Each gas management panel shall also provide the ability to evacuate the tubing in the panel via a government-supplied vacuum pump. The tubing in each gas management panel shall be able to be evacuated to a pressure of at most 1 Torr; the inlet pressure to the vacuum pump will be at most 100 millitorr. In addition to evacuating the gas management panel, the panel shall be able to use the vacuum for leak detection by closing valves and measuring pressure rise.

**4.1.7** All components on each gas management panel shall be mounted on a flat panel. Two of the gas management panels shall be able to be mounted in existing government-owned gas cabinets, which are Matheson Tri-Gas model number 1170. The layout of the components on the panel shall be designed such that the components may be easily removed for servicing or replacement. All measurement devices such as pressure transducers shall be able to be easily removed for calibration. All relief valves shall be able to be easily removed for setting and verification.

**4.1.8** The design of the gas management panels shall be such that the un-purged volume of the panel's tubing is minimized. Of particular concern is the length of tubing from the panel to the gas bottle sourcing the gas species. The vendor shall provide the volume of any un-purged tubing volume. The government may request that the vendor design be modified to reduce any un-purged volume.

## **4.2 Mechanical specifications:**

**4.2.1** Each panel shall provide a flexible hose connection with the related CGA fitting for each of the six gasses listed (HCL, HF, COS, CO, SO<sub>2</sub> & NO) for connection to the gas bottles. Each panel shall provide a VCR fitting for connection to the government-supplied vacuum pump (for tubing and component evacuation), as well as a VCR fitting for connection to the government-supplied nitrogen supply (for tubing and component purging).

**4.2.2** The panels shall incorporate valves that can be actuated (open/close) pneumatically via manufacturer-supplied solenoid valves. The valves shall be able to be actuated with either nitrogen or service air at supply pressures of 80 to 120 psig, filtered to 0.5 microns. The solenoid valves shall be able to be actuated by 120 VAC or 24 VDC.

**4.2.3** Each panel shall include relief valves at the locations noted in the representative diagram. The relief valve vents shall be tied to a common point for venting of each gas panel, i.e. only one vent for each panel is required.

**4.2.4** The material of any component in each panel that may be exposed to the gas being managed by the panel shall be SS-316.

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**4.2.5** Each panel shall be constructed of orbital-welded tubing that has been leak-checked. The leak check shall consist of a helium leak test to  $5.0 \times 10^{-9}$  SCC/S He, and shall be performed by the gas management panel manufacturer. All results of the performance testing, including leak checking and pressure testing, shall be furnished to the government for review and acceptance. All testing shall be performed using NIST-traceable standards. The serial numbers and NIST calibration records shall be supplied with the leak testing results.

**4.2.6** Each panel shall be designed such that gases can be supplied to the mixer can be supplied at a rate of 15 slpm for the flow through the panels.

### **4.3 Electrical Specifications:**

**4.3.1** All instrumentation shall have a standard 4-20 mA analog output signal. Pressure transducers shall be the PTM series of pressure transducer from STS Sensors. Allowable temperature sensors include type T thermocouples and 100-ohm platinum RTDs. It is the government's desire that the pressure sensors be isolated from the toxic gas species via the use of diaphragm barriers.

**4.3.2** Solenoid valves shall be actuated by 24 VDC or 120 VAC, and shall be able to be energized by a standard PLC output. Each solenoid valve shall draw a maximum of 300 mA in the energized state, and a current of at least 5 mA shall be required to energize each solenoid valve.

**4.3.3** Each gas panel shall have all discrete device wiring terminated to a terminal strip located either on the panel or within 3 feet of the panel, so that personnel can check the state of devices with standard voltmeters. Instrumentation may be terminated with standard connectors, such as type T thermocouple mini-connectors and PT06A-10-6S connectors for pressure transmitters.

**4.3.4** The wiring for all devices for the gas management panels shall be strain-relieved according to standard acceptable manufacturing standards.

**4.3.5** Each gas management panel shall have a means to ground the panel to the gas cabinet or other grounding (bonding) means per NEC requirements.

**4.3.6** All analog instrumentation wiring shall be twisted-pair cabling, with each pair individually shielded. The vendor shall connect the shield wire of each pair to a connector pin or terminal strip. NASA personnel will properly terminate the shield wires at the PLC.

**4.3.7** The contractor shall note that the government-owned PLC is already equipped to control 24VDC solenoid valves, read limit switches (24 VDC) and



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read analog input voltages and currents.

**4.3.8** The contractor shall verify that there are no build errors or warnings upon compilation of the code. Error messages automatically mean the written code will not work, and these errors will not be acceptable.

#### **4.4 Option 1 – Back up Panel**

**4.4.1** All specifications (4.1 – 4.3) for the Base Effort (6 panels) shall apply to the optional back-up panel as well.

#### **4.5 Option 2 – Programming of Panels**

**4.5.1** Option 2 is for the PLC programming for the automated control of the gas management panels, as well as the HMI programming.

**4.5.2** The PLC programming shall be performed using Schneider Automation's Unity Pro software, version 6.0 service pack 1. The PLC that will be controlling these gas management panels will be a Square D Modicon Quantum controller.

**4.5.3** The HMI software programming shall be performed using Schneider Automation's Vijeo programming software version 6.0. The HMI code will be downloaded to government-owned Magelis XBGTB6340 touchscreens.

**4.5.4** The offeror shall provide the source code for the PLC programming and HMI programming.

**4.5.5** The PLC software shall incorporate all functionality for the gas management panels. All functionality, including valve operation, leak detection via pressure rise, and leak detection via pressure decay, shall be incorporated into the PLC code.

**4.5.6** The PLC software shall be programmed such that it can be imported into an existing PLC program. It is NASA's strong preference that the PLC software be programmed with derived function blocks (DFBs), which can then be used in the main PLC code (once for each gas management panel). NASA personnel can supply example code if the offeror so desires.

#### **4.6 Acceptance Testing**

Upon delivery of the gas management panels, NASA personnel will perform acceptance testing on each panel. This testing will consist of at least the following minimum steps:

**4.6.1** Verification of correct valve operation, pressure sensor functionality.

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**4.6.2** Verification of purge function, evacuation function, bottle change-out function, and gas supply function.

**4.6.3** Verification of rate-of-pressure decay (purge function) and rate of pressure rise (evacuation function).

**4.6.4** Verification of correct PLC software functionality (option 2).

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## **5. DOCUMENTATION**

**5.1** For the purposes of quote evaluation, and in addition to prices for each panel, the offeror shall include the following documentation:

**5.1.1** Basic panel design and layout, including dimensions and approximate weight of each panel.

**5.1.2** Catalog sheets of proposed commercial products such as solenoid valves, relief valves, pressure sensors, etc. These sheets will show each component's compatibility with the required gasses and rated temperatures and pressures.

**5.1.3** Basic theory of operation.

**5.1.4** Procedures for evacuation, purge, bottle change-out, and gas supply to the gas mixer.

**5.1.5** Basic dimensions of the panel.

**5.1.6** Expected performance specifications: gas flow to the mixer (output flow), evacuation pressure versus time, rate of pressure rise during evacuated leak test, rate of pressure decay during pressurized leak test.

**5.2** The contract awardee shall supply the following documentation within 14 days of contract award:

**5.2.1** Changes to catalog sheets of commercial equipment used in the gas management panels.

**5.2.2** Design performance specifications: gas flow to the mixer (output flow), evacuation pressure versus time, purge pressure, rate of pressure rise during evacuated leak test, rate of pressure decay during pressurized leak test.

**5.2.3** Detailed theory of operation of the panels.

**5.2.4** Expected maintenance required for each gas panel.

**5.2.5** Expected installation instructions for each gas panel, including mounting required, interface points to external equipment (mechanical, electrical, and tubing).

**5.2.6** All technical details allowing a proficient PLC programmer to program the logic required for the automated control system.

**5.2.7** Troubleshooting guide.

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**5.2.8** Procedures for purging the gas panels with nitrogen, evacuating the gas panels (with the vacuum source), and supplying the gas species through the gas panels.

**5.2.9** Procedures for changing gas bottles supplying the gas panels.

**5.2.10** NASA personnel will supply comments within 7 days of receipt of the documentation. If any deficiencies are noted, the contract awardee may correct them within 7 days of notice.

**5.3** Upon delivery of the gas management panels to NASA, the contract awardee shall supply the following documentation:

**5.3.1** Complete list of commercial equipment used in each panel, as well as catalog sheets of commercial equipment.

**5.3.2** Material certifications and/or mill test reports.

**5.3.3** Welder certifications for the materials and type of orbital welding used.

**5.3.4** Any hydrostatic or pneumatic pressure test reports.

**5.3.5** Any inspection and non-destructive examination (NDE) reports.

**5.3.6** Data from the orbital welder that shows the proper settings for each weld to verify that a quality weld was obtained.

**5.3.7** Final measured performance specifications: gas flow to the mixer (output flow), evacuation pressure versus time, purge pressure, rate of pressure rise during evacuated leak test, rate of pressure decay during pressurized leak test.

**5.3.8** Detailed theory of operation of the panels, including panel layout with dimensions, and piping and instrumentation diagram (P&ID).

**5.3.9** Maintenance required for each gas panel.

**5.3.10** Installation instructions for each gas panel, including mounting required, interface points to external equipment (mechanical, electrical, and tubing).

**5.3.11** Electrical specifications for each panel, including wiring diagrams, connector pinouts, and power required.

**5.3.12** Technical details allowing a proficient PLC programmer to program the logic required to design the logic for the automated control system.

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**5.3.13** Troubleshooting guide.

**5.3.14** Procedures for purging the gas panels with nitrogen, evacuating the gas panels (with the vacuum source), and supplying the gas species through the gas panels.

**5.3.15** Procedures for changing gas bottles supplying the gas panels.

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**6. APPLICABLE FEDERAL ACQUISITION REGULATION (FAR) CLAUSES, NASA FAR SUPPLEMENT (NFS) CLAUSES, AND SUPPLEMENTAL CLAUSES**

**6.1 52.212-4 Contract Terms and Conditions - Commercial Items. (FEB 2012)**

**6.2 52.212-5 Contract Terms and Conditions Required to Implement Statutes or Executive Orders - Commercial Items. (MAY 2012)**

(a) The Contractor shall comply with the following Federal Acquisition Regulation (FAR) clauses, which are incorporated in this contract by reference, to implement provisions of law or Executive orders applicable to acquisitions of commercial items:

(1) 52.222-50, Combating Trafficking in Persons (FEB 2009) (22 U.S.C. 7104(g)).

[ ] Alternate I (Aug 2007) of 52.222-50 (22 U.S.C. 7104(g)).

(2) 52.233-3, Protest After Award (AUG 1996) (31 U.S.C. 3553).

(3) 52.233-4, Applicable Law for Breach of Contract Claim (OCT 2004) (Pub. L. 108-77, 108-78).

(b) The Contractor shall comply with the FAR clauses in this paragraph (b) that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items: Contracting Officer check as appropriate.

**[X](1) 52.203-6, Restrictions on Subcontractor Sales to the Government (SEP 2006), with Alternate I (OCT 1995) (41 U.S.C. 253g and 10 U.S.C. 2402).**

[ ](2) 52.203-13, Contractor Code of Business Ethics and Conduct (APR 2010)(Pub. L. 110-252, Title VI, Chapter 1 (41 U.S.C. 251 note)).

[ ](3) 52.203-15, Whistleblower Protections under the American Recovery and Reinvestment Act of 2009 (JUN 2010) (Section 1553 of Pub. L. 111-5). (Applies to contracts funded by the American Recovery and Reinvestment Act of 2009.)

**[X](4) 52.204-10, Reporting Executive Compensation and First-Tier Subcontract Awards (FEB 2012) (Pub. L. 109-282) (31 U.S.C. 6101 note).**

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[ ](5) 52.204-11, American Recovery and Reinvestment Act--Reporting Requirements (JUL 2010) (Pub. L. 111-5).

**[X](6) 52.209-6, Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (DEC 2010) (31 U.S.C. 6101 note).**

[ ](7) 52.209-9, Updates of Publicly Available Information Regarding Responsibility Matters (FEB 2012) (41 U.S.C. 2313).

**[X](8) 52.209-10, Prohibition on Contracting with Inverted Domestic Corporations (MAY 2012) (section 738 of Division C of Pub. L. 112-74, section 740 of Division C of Pub. L. 111-117, section 743 of Division D of Pub. L. 111-8, and section 745 of Division D of Pub. L. 110-161).**

[ ](9) 52.219-3, Notice of HUBZone Set-Aside or Sole-Source Award (NOV 2011) (15 U.S.C. 657a).

**[X](10) 52.219-4, Notice of Price Evaluation Preference for HUBZone Small Business Concerns (JAN 2011) (if the offeror elects to waive the preference, it shall so indicate in its offer) (15 U.S.C. 657a).**

[ ](11) (Reserved)

[ ](12)(i) 52.219-6, Notice of Total Small Business Set-Aside (NOV 2011) (15 U.S.C. 644).

[ ](ii) Alternate I (NOV 2011).

[ ](iii) Alternate II (NOV 2011).

[ ](13)(i) 52.219-7, Notice of Partial Small Business Set-Aside (JUN 2003) (15 U.S.C. 644).

[ ](ii) Alternate I (OCT 1995) of 52.219-7.

[ ] (iii) Alternate II (MAR 2004) of 52.219-7.

**[X](14) 52.219-8, Utilization of Small Business Concerns (JAN 2011) (15 U.S.C. 637 (d)(2) and (3)).**

[ ](15)(i) 52.219-9, Small Business Subcontracting Plan (JAN 2011) (15 U.S.C. 637(d)(4).

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[ ](ii) Alternate I (OCT 2001) of 52.219-9.

[ ](iii) Alternate II (OCT 2001) of 52.219-9.

[ ](iv) Alternate III (JUL 2010) of 52.219-9.

[ ](16) 52.219-13, Notice of Set-Aside of Orders (NOV 2011) (15 U.S.C. 644(r)).

(17) 52.219-14, Limitations on Subcontracting (NOV 2011) (15 U.S.C. 637(a)(14)).

[ ](18) 52.219-16, Liquidated Damages--Subcontracting Plan (JAN 1999) (15 U.S.C. 637(d)(4)(F)(i)).

[ ](19)(i) 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns (OCT 2008) (10 U.S.C. 2323)(if the offeror elects to waive the adjustment, it shall so indicate in its offer.)

[ ](ii) Alternate I (JUN 2003) of 52.219-23.

[ ](20) 52.219-25, Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting (DEC 2010) (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323).

[ ](21) 52.219-26, Small Disadvantaged Business Participation Program--Incentive Subcontracting (OCT 2000) (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323).

[ ](22) 52.219-27, Notice of Service-Disabled Veteran-Owned Small Business Set-Aside (NOV 2011) (15 U.S.C. 657f).

**[X](23) 52.219-28, Post Award Small Business Program Rerepresentation (APR 2012) (15 U.S.C. 632(a)(2)).**

[ ](24) 52.219-29, Notice of Set-Aside for Economically Disadvantaged Women-Owned Small Business (EDWOSB) Concerns (APR 2012) (15 U.S.C. 637(m)).

[ ](25) 52.219-30, Notice of Set-Aside for Women-Owned Small Business (WOSB) Concerns Eligible Under the WOSB Program (APR 2012) (15 U.S.C. 637(m)).

**[X](26) 52.222-3, Convict Labor (JUN 2003) (E.O. 11755).**



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**[X](27) 52.222-19, Child Labor-Cooperation with Authorities and Remedies (MAR 2012) (E.O. 13126).**

**[X](28) 52.222-21, Prohibition of Segregated Facilities (FEB 1999).**

**[X](29) 52.222-26, Equal Opportunity (MAR 2007) (E.O. 11246).**

**[X](30) 52.222-35, Equal Opportunity for Veterans (SEP 2010) (38 U.S.C. 4212).**

**[X](31) 52.222-36, Affirmative Action for Workers with Disabilities (OCT 2010) (29 U.S.C. 793).**

**[X](32) 52.222-37, Employment Reports on Veterans (SEP 2010) (38 U.S.C. 4212).**

**[X](33) 52.222-40, Notification of Employee Rights Under the National Labor Relations Act (DEC 2010) (E.O. 13496).**

[ ](34) 52.222-54, Employment Eligibility Verification (JAN 2009). (Executive Order 12989). (Not applicable to the acquisition of commercially available off-the-shelf items or certain other types of commercial items as prescribed in 22.1803.)

[ ](35)(i) 52.223-9, Estimate of Percentage of Recovered Material Content for EPA-Designated Items (MAY 2008) (42 U.S.C. 6962(c)(3)(A)(ii)). (Not applicable to the acquisition of commercially available off-the-shelf items.)

[ ](ii) Alternate I (MAY 2008) of 52.223-9 (42 U.S.C. 6962(i)(2)(C)). (Not applicable to the acquisition of commercially available off-the-shelf items.)

[ ](36) 52.223-15, Energy Efficiency in Energy-Consuming Products (DEC 2007) (42 U.S.C. 8259b).

[ ](37)(i) 52.223-16, IEEE 1680 Standard for the Environmental Assessment of Personal Computer Products (DEC 2007) (E.O. 13423).

[ ](ii) Alternate I (DEC 2007) of 52.223-16.

**[X](38) 52.223-18, Encouraging Contractor Policies to Ban Text Messaging While Driving (AUG 2011). (E.O. 13513).**

[ ](39) 52.225-1, Buy American Act - Supplies (FEB 2009) (41 U.S.C.

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10a-10d).

[ ](40)(i) 52.225-3, Buy American Act-Free Trade Agreements-Israeli Trade Act (MAY 2012) (41 U.S.C. chapter 83, 19 U.S.C. 3301 note, 19 U.S.C. 2112 note, 19 U.S.C. 3805 note, 19 U.S.C. 4001 note, Pub. L. 103-182, 108-77, 108-78, 108-286, 108-302, 109-53, 109-169, 109-283, 110-138, 112-41, and 112-42).

[ ](ii) Alternate I (MAR 2012) of 52.225-3.

[ ](iii) Alternate II (MAR 2012) of 52.225-3.

[ ](iv) Alternate III (MAR 2012) of 52.225-3.

[ ](41) 52.225-5, Trade Agreements (MAY 2012) (19 U.S.C. 2501, *et seq.*, 19 U.S.C. 3301 note).

**[X](42) 52.225-13, Restrictions on Certain Foreign Purchases (JUN 2008) (E.O.'s, proclamations, and statutes administered by the Office of Foreign Assets Control of the Department of the Treasury).**

[ ](43) 52.226-4, Notice of Disaster or Emergency Area Set-Aside (NOV 2007) (42 U.S.C. 5150).

[ ](44) 52.226-5, Restrictions on Subcontracting Outside Disaster or Emergency Area (NOV 2007) (42 U.S.C. 5150).

[ ](45) 52.232-29, Terms for Financing of Purchases of Commercial Items (FEB 2002) (41 U.S.C. 255(f), 10 U.S.C. 2307(f)).

**[X](46) 52.232-30, Installment Payments for Commercial Items (OCT 1995) (41 U.S.C. 255(f), 10 U.S.C. 2307(f)).**

[X](47) 52.232-33, Payment by Electronic Funds Transfer - Central Contractor Registration (OCT 2003) (31 U.S.C. 3332).

[ ](48) 52.232-34, Payment by Electronic Funds Transfer - Other than Central Contractor Registration (MAY 1999) (31 U.S.C. 3332).

[ ](49) 52.232-36, Payment by Third Party (FEB 2010) (31 U.S.C. 3332).

[X](50) 52.239-1, Privacy or Security Safeguards (AUG 1996) (5 U.S.C. 552a).

[ ](51)(i) 52.247-64, Preference for Privately Owned U.S.-Flag

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Commercial Vessels (FEB 2006) (46 U.S.C. Appx 1241(b) and 10 U.S.C. 2631).

[ ](ii) Alternate I (APR 2003) of 52.247-64.

(c) The Contractor shall comply with the FAR clauses in this paragraph (c), applicable to commercial services, that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items: (Contracting Officer check as appropriate.)

[ ](1) 52.222-41, Service Contract Act of 1965 (NOV 2007) (41 U.S.C. 351, et seq.).

[ ](2) 52.222-42, Statement of Equivalent Rates for Federal Hires (MAY 1989) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).

[ ](3) 52.222-43, Fair Labor Standards Act and Service Contract Act--Price Adjustment (Multiple Year and Option Contracts) (SEP 2009) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).

[ ](4) 52.222-44, Fair Labor Standards Act and Service Contract Act--Price Adjustment (SEP 2009) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).

[ ](5) 52.222-51, Exemption from Application of the Service Contract Act to Contracts for Maintenance, Calibration, or Repair of Certain Equipment--Requirements (NOV 2007) (41 U.S.C. 351, et seq.).

[ ](6) 52.222-53, Exemption from Application of the Service Contract Act to Contracts for Certain Services--Requirements (FEB 2009) (41 U.S.C. 351, et seq.).

[ ](7) 52.226-6, Promoting Excess Food Donation to Nonprofit Organizations. (MAR 2009) (Pub. L. 110-247).

[ ](8) 52.237-11, Accepting and Dispensing of \$1 Coin (SEP 2008) (31 U.S.C. 5112(p)(1)).

(d) *Comptroller General Examination of Record.* The Contractor shall comply with the provisions of this paragraph (d) if this contract was awarded using other than sealed bid, is in excess of the simplified acquisition threshold, and does not contain the clause at 52.215-2, Audit and Records - Negotiation.

(1) The Comptroller General of the United States, or an authorized representative of the Comptroller General, shall have access to and right to

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examine any of the Contractor's directly pertinent records involving transactions related to this contract.

(2) The Contractor shall make available at its offices at all reasonable times the records, materials, and other evidence for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in FAR Subpart 4.7, Contractor Records Retention, of the other clauses of this contract. If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement. Records relating to appeals under the disputes clause or to litigation or the settlement of claims arising under or relating to this contract shall be made available until such appeals, litigation, or claims are finally resolved.

(3) As used in this clause, records include books, documents, accounting procedures and practices, and other data, regardless of type and regardless of form. This does not require the Contractor to create or maintain any record that the Contractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e)(1) Notwithstanding the requirements of the clauses in paragraphs (a), (b), (c), and (d) of this clause, the Contractor is not required to flow down any FAR clause, other than those in this paragraph (e)(1) in a subcontract for commercial items. Unless otherwise indicated below, the extent of the flow down shall be as required by the clause--

(i) 52.203-13, Contractor Code of Business Ethics and Conduct (APR 2010) (Pub. L. 110-252, Title VI, Chapter 1 (41 U.S.C. 251 note)).

(ii) 52.219-8, Utilization of Small Business Concerns (DEC 2010) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$650,000 (\$1.5 million for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(iii) (Reserved)

(iv) 52.222-26, Equal Opportunity (MAR 2007) (E.O. 11246).

(v) 52.222-35, Equal Opportunity for Veterans (SEP 2010) (38 U.S.C. 4212).

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(vi) 52.222-36, Affirmative Action for Workers with Disabilities (OCT 2010) (29 U.S.C. 793).

(vii) 52.222-40, Notification of Employee Rights Under the National Labor Relations Act (DEC 2010) (E.O. 13496). Flow down required in accordance with paragraph (f) of FAR clause 52.222-40.

(viii) 52.222-41, Service Contract Act of 1965 (NOV 2007) (41 U.S.C. 351, et seq.).

(ix) 52.222-50, Combating Trafficking in Persons (FEB 2009) (22 U.S.C. 7104(g)).

Alternate I (AUG 2007) of 52.222-50 (22 U.S.C. 7104(g)).

(x) 52.222-51, Exemption from Application of the Service Contract Act to Contracts for Maintenance, Calibration, or Repair of Certain Equipment--Requirements (NOV 2007) (41 U.S.C. 351, et seq.).

(xi) 52.222-53, Exemption from Application of the Service Contract Act to Contracts for Certain Services-Requirements (FEB 2009)(41 U.S.C. 351, et seq.).

(xii) 52.222-54, Employment Eligibility Verification (JAN 2009).

(xiii) 52.226-6, Promoting Excess Food Donation to Nonprofit Organizations. (MAR 2009) (Pub. L. 110-247). Flow down required in accordance with paragraph (e) of FAR clause 52.226-6.

(xiv) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (FEB 2006) (46 U.S.C. Appx 1241(b) and 10 U.S.C. 2631). Flow down required in accordance with paragraph (d) of FAR clause 52.247-64.

(2) While not required, the contractor may include in its subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(End of clause)

### **6.3 52.217-7 Option to Extend the Term of the Contract. (Mar 2000)**

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(a) The Government may extend the term of this contract by written notice to the Contractor within any time during the contract period of performance]; provided that the Government gives the Contractor a preliminary written notice of its intent to extend at least 15 days before the contract expires. The preliminary notice does not commit the Government to an extension.

(b) If the Government exercises this option, the extended contract shall be considered to include this option clause.

(c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed TBD.

(End clause)

**6.4 52.252-2 Clauses Incorporated by Reference. (FEB 1998)**

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these addresses:

For Federal Acquisition Regulation (FAR) clauses, see  
<https://www.acquisition.gov/far/index.html>.

For NASA FAR Supplement (NFS) clauses, see  
<http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>.

(End of clause)

**6.5 1852.215-84 Ombudsman. (NOV 2011)**

**6.6 1852.219-76 NASA 8 Percent Goal. (JUL 1997)**

**6.7 1852.223-72 Safety and Health (Short Form). (APR 2002)**

**6.8 1852.237-73 Release of Sensitive Information. (JUN 2005)**

**6.9 1852.245-72 Liability for Government Property Furnished for Repair or Other Services. (JAN 2011)**

**6.10 1852.246-72 Material Inspection and Receiving Report. (AUG 2003)**

**6.11 Option to Extend**

In accordance with FAR clause 52.217-9, "Option to Extend the Term of the

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Contract" of this contract, the contracting officer may exercise the following option(s) by issuance of a unilateral contract modification. Options exercised shall be in accordance with the following:

- 1) Option 1 - 1 Back-Up Automated Gas Management Panel, identical to the first 6, delivered by November 2, 2012.
- 2) Programming of Automated Gas Management Panels, completed November 2, 2012.

(End of clause)

[END OF SECTION]

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## 7. SOLICITATION INSTRUCTIONS

### Administrative

**7.1** Offerors shall provide the information required by FAR 52.212-1, “Instructions to Offerors—Commercial Items.”

**7.2** Offerors shall provide a price quote in American dollars for the Base Effort (Sections 4.1 – 4.3). If the offeror wishes to submit information for either one or both of the Options, the offeror shall also provide price quotes for said Options (Sections 4.4 – 4.5). Quotes shall be all-inclusive, consisting of, but not limited to: labor/material/overhead costs, shipping/handling, installation at GRC, duties, profit, travel, and any other costs associated with completing the Base or Options.

**7.3** A copy of a published price list, catalog price or computer page printout showing the price for Items listed in the Specifications may also be included if desired. (Note, the Contracting Officer may request this information if only 1 source provides an offer).

**7.4** Offerors shall provide a statement of their relative past performance in the manufacture and sale of similar gas panels, and on the programming of such panels (if providing a quote for Option 2).

**7.5** Your offer may take exceptions to the terms and conditions of this solicitation. If so, state the item taken exception to and the proposed alternative. **Note that by your doing so, the Contracting Officer may reject your offer as non-responsive if it is not in the best interests of the Government to accept the alternative offered.** Your offer should include: FOB destination to this Center, proposed delivery schedule, discount/payment terms, warranty duration (if applicable), Cage Code, DUNS identification number, Representations and Certifications, identification of any special commercial terms, description of items offered per 52.212-1 (and as modified), and the offer shall be signed by an authorized company representative. Offerors are encouraged to use the Standard Form 1449, Solicitation/Contract/Order for Commercial Items form attached, for offers. Faxed offers ARE NOT acceptable.

**7.6** Offerors must include a completed copy of the provision at 52.212-3, Offeror Representations and Certifications - Commercial Items with their offer or the following paragraph: *“The offeror has completed the annual representations and certifications electronically via the System for Award Management (SAM) website at <https://www.sam.gov/portal/public/SAM/>. After reviewing the database information, the offeror verifies by submission of this offer that the representations and certifications currently posted electronically at FAR 52.212-3, Offeror Representations and Certifications—Commercial Items, have been entered or updated in the last 12 months, are current, accurate, complete, and applicable to this*



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*solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201), except for paragraphs \_\_\_\_\_. [Offeror to identify the applicable paragraphs at (b) through (j) of this provision that the offeror has completed for the purposes of this solicitation only, if any.]* The representations and certifications will be incorporated by reference in any resultant contract. Representations and Certifications may be obtained via the internet at URLs:

[http://prod.nais.nasa.gov/eps/Templates/Commercial\\_Greater\\_Than\\_25K.doc](http://prod.nais.nasa.gov/eps/Templates/Commercial_Greater_Than_25K.doc)  
or <http://www.grc.nasa.gov/WWW/Procure/rforms.html>.

Technical

**7.7** The offeror shall submit information which details its ability to meet ALL specifications in sections 4.1 Overall Specifications, 4.2 Mechanical Specifications and 4.3 electrical Specifications. The offeror should assume the Government knows nothing at all about its capabilities, and should explain in thorough detail the approach it will take in meeting all specifications.

**7.8** [This subsection only applies if the offeror decides to quote on Option 1]. The offeror shall submit information which details its ability to meet ALL specifications in sections 4.4 Option 1 – Backup Panel. It is noted that all specifications for 4.1 Overall Specifications, 4.2 Mechanical Specifications and 4.3 Electrical Specifications must apply identically to Option 1. The offeror should assume the Government knows nothing at all about its capabilities, and should explain in thorough detail the approach it will take in meeting all specifications

**7.9** [This subsection only applies if the offeror decides to quote on Option 2]. The offeror shall submit information which details its ability to meet ALL specifications in section 4.5 Option 2 – Programming of Panels. The offeror should assume the Government knows nothing at all about its capabilities, and should explain in thorough detail the approach it will take in meeting all specifications.

**7.10** The offeror shall provide all documentation as described in section 5.1.

**7.11** The offeror shall provide confirmation that, if an award is granted, it will be willing and able to provide all documentation as discussed in sections 5.2 – 5.3.

**7.12** Offerors may cite the web site that demonstrates all specifications are met for the item offered in lieu of providing an e-mailed or paper copy. Web sites that are not viewable for any reason for up to 5 business days after the offer due date may result in the offer being determined to be non-responsive.

[END OF SECTION]

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## 8. SELECTION / EVALUATION

### 8.1 52.212-2 Evaluation - Commercial Items. (JAN 1999)

(a) The Government will award a contract resulting from this solicitation to the responsible offeror whose offer conforming to the solicitation will be most advantageous to the Government, price and other factors considered. This means award will be conducted on a BEST VALUE basis. The following factors, in no particular order, shall be used to evaluate offers:

- 1) Price/Cost – The ability of the offeror to provide a fair and reasonable price.
- 2) Technical Merit – The ability of the offeror to successfully meet all specifications and reporting requirements in Sections 4 – 5 of this Solicitation.
- 3) Past Performance – The ability of the offeror to show their relative past performance, preferably 5 years or more, in manufacturing similar panels and providing programming services (if Option 2 is quoted).
- 4) Better Value features – These following features are considered ‘better value features’ and are features that go above and beyond what the Government is minimally asking for. Offerors who do *not* provide these better value features will *not* be rated negatively for failing to provide them. However, offerors who *do* meet or exceed the better value features *can* be rated more favorably than those who do not:
  - a. Delivery time – The ability to deliver before the required delivery dates of November 2, 2012.
  - b. Warranty – The ability to provide a warranty longer than 1 year.
  - c. Technical Assistance – The ability to provide physical (in-person) technical assistance during installation.
  - d. Unique design methods – The ability to reduce costs via proprietary and/or unique design methods that meet *and* exceed NASA specifications.

Technical and past performance, when combined, are EQUAL to price.

(b) *Options*. The Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. The Government may determine that an offer is unacceptable if the option prices are

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significantly unbalanced. Evaluation of options shall not obligate the Government to exercise the option(s).

(c) A written notice of award or acceptance of an offer, mailed or otherwise furnished to the successful offeror within the time for acceptance specified in the offer, shall result in a binding contract without further action by either party. Before the offer's specified expiration time, the Government may accept an offer (or part of an offer), whether or not there are negotiations after its receipt, unless a written notice of withdrawal is received before award.

(End of provision)

[END OF SECTION]

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## **9. MISCELLANEOUS**

### **9.1 PAYMENT TERMS**

Per FAR 32.202-1, it is the responsibility of the contractor to provide all resources needed for performance of commercial contracts. Thus, for purchases of commercial items, financing of the contract is normally the contractor's responsibility. However, in some markets the provision of financing by the buyer is a commercial practice. In these circumstances, the contracting officer may include appropriate financing terms in contracts for commercial purchases when doing so will be in the best interest of the Government.

If the offeror can show that it is customary in the gas management panel market for the buyer (in this case, the Government) to provide financing, please provide this evidence. The Government is willing to consider contract financing in accordance with FAR 32.2.

[END OF SECTION AND SOLICITATION]